

BIOCHEMISTRY MAJOR

Degree Requirements

All students are required to complete overall degree requirements in addition to their major. Please see Degree Completion Requirements (<https://catalog.hiram.edu/undergraduate/student-academic-responsibilities-performance/degree-completion-requirements/>) for full details for students entering in the 2024-2025 catalog year.

Those students who started at Hiram prior to the 2024-2025 academic year will follow the Degree Requirements outlined in your catalog of record.

Major Requirements

Biochemistry majors must complete 15 courses in the natural sciences, not including General Chemistry (CHEM 12000 GEN I:STRUCTURE/BOND-W/LAB:SM, CHEM 12100 GEN II:INTR CHEM ANLS-W/LAB:SM). A student wishing to major in biochemistry **must** be advised by the biochemistry professor.

Code	Title	Hours
Core Courses		
BIOL 15200	INTRO BIO II W/LAB:SM ¹	4
BIOL 23000	MOLECULAR&CELLULAR BIOL-W/LAB	4
BIOL 36500	GENETICS-W/LAB	4
CHEM 22000	INTRO TO ORGANIC CHEM-W/LAB	4
CHEM 32000	INTERMED ORGANIC CHEM-W/LAB	4
CHEM 35000	PHYSICAL CHEMISTRY I-W/LAB	4
BCHM 36600	BASIC BIOCHEMISTRY-W/LAB	4
BCHM 36800	INTERMED BIOCHEMISTRY-W/LAB	4
Elective Courses		
Select two of the following: ²		8
BIOL 32600	ANIMAL PHYSIOLOGY-W/LAB	
BIOL 33800	MICROBIOLOGY-W/LAB	
BIOL 34000	DEVELOPMENTAL BIOL-W/LAB	
BIOL 41500	ADV MOLECULAR BIOL-W/LAB	
CHEM 23000	INTRO TO INORGANIC CHEM-W/LAB	
CHEM 24000	QUANTITATIVE ANALYSIS-W/LAB	
CHEM 35100	PHYSICAL CHEMISTRY II-W/LAB	
Capstone: The Internship Experience		
Select one of the following: ³		1-4
BIOL 49800	INTERNSHIP	
CHEM 49800	INTERNSHIP	
CHEM 48000	SENIOR SEMINAR	
Required Correlative Courses ⁴		
MATH 19800	CALCULUS I:MM	4
MATH 19900	CALCULUS II:MM	4
PHYS 21300	FUNMNTLS OF PHYSICS-W/LAB I:SM	4
PHYS 21400	FUNMNTL OF PHYSICS-W/LAB II:SM	4
Total Hours		57-60

1

Waived by permission if the student has taken honors biology or received a 4 on the biology placement test.

2

Two upper-level courses in biology or chemistry from among the following allow the student to develop their own interests. Other courses may be substituted with the approval of the biochemistry major advisor.

3

Biochemistry seniors have the option of completing an APEX presentation (BIOL 49800 INTERNSHIP during the fall or spring semester) worth 4 credit hours or a chemistry seminar (CHEM 48000 SENIOR SEMINAR) during spring semester worth one credit hour.

4

Courses in mathematics and physics provide the biochemistry student with important quantitative tools and a solid understanding of physical concepts important to biochemistry.

Capstone: The Internship Experience

The internship experience provides laboratory experience in different disciplines within biochemistry (biological, chemical, and medical research) and may be completed on or off campus. The student gives a presentation of the research project to fellow students, faculty, and other interested people. The student also writes a paper, in scientific journal format, about the research.

Typical Schedule - see Pathway Pathway

Course	Title	Hours	Term
First Year			
Fall 12 Week			
CHEM 12000	GEN I:STRUCTURE/BOND-W/LAB:SM	4	_____
MATH 19800	CALCULUS I:MM	4	_____
UCS 10101	FIRST-YEAR ENDURING QUESTIONS	4	_____
Hours		12	
Fall 3 Week			
Hiram Core Requirement		3-4	_____
Hours		3-4	
Spring 12 Week			
CHEM 12100	GEN II:INTR CHEM ANLS-W/LAB:SM	4	_____
MATH 19900	CALCULUS II:MM	4	_____
UCS 20201	ADDRESSING URGENT QUESTIONS	4	_____
Hours		12	
Spring 3 Week			
Hiram Core Requirement		3-4	_____
Hours		3-4	
Second Year			
Fall 12 Week			
CHEM 22000	INTRO TO ORGANIC CHEM-W/LAB	4	_____
PHYS 21300	FUNMNTLS OF PHYSICS-W/LAB I:SM	4	_____
Hours		4	
Spring 12 Week			
CHEM 22000	INTRO TO ORGANIC CHEM-W/LAB	4	_____
PHYS 21300	FUNMNTLS OF PHYSICS-W/LAB I:SM	4	_____
Hours		4	
Hiram Core Requirement		4	_____
Hours		12	

Fall 3 Week

Hiram Core Requirement	4	_____
Hours	4	

Spring 12 Week

CHEM 32000	INTERMED ORGANIC CHEM-W/ LAB	4	_____
PHYS 21400	FUNMNTL OF PHYSICS-W/LAB II:SM	4	_____
BIOL 15200	INTRO BIO II W/LAB:SM	4	_____
Hours		12	

Spring 3 Week

Hiram Core Requirement	3-4	_____
Hours	3-4	

Third Year**Fall 12 Week**

BCHM 36600	BASIC BIOCHEMISTRY-W/LAB	4	_____
BIOL 23000	MOLECULAR&CELLULAR BIOL- W/LAB	4	_____
UCS 30301	URGENT CHALLENGE SEMINAR:TT	4	_____
Hours		12	

Fall 3 Week

CHEM 38100	SPC TPC:	3-4	_____
Hours		3-4	

Spring 12 Week

BCHM 36800	INTERMED BIOCHEMISTRY-W/ LAB	4	_____
BIOL XXXXX	Biology Elective	4	_____
Hiram Core Requirement		4	_____
Hours		12	

Spring 3 Week

BCHM 48300	RESEARCH TECHNIQUES BIOCHEM	3-4	_____
Hours		3-4	

Fourth Year**Fall 12 Week**

CHEM 35000	PHYSICAL CHEMISTRY I-W/LAB	4	_____
Hiram Core Requirement		4	_____
Elective, Second Major, Minor Course		4	_____
Hours		12	

Fall 3 Week

Elective, Second Major, Minor Course		4	_____
Hours		4	

Spring 12 Week

BIOL 36500	GENETICS-W/LAB	4	_____
Hiram Core Requirement		4	_____
Elective, Second Major, Minor Course		4	_____
Hours		12	

Spring 3 Week

Elective, Second Major, Minor Course		3-4	_____
Hours		3-4	

Total Hours	122-128
--------------------	----------------